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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/677,317	10/03/2003	Chin Wen Wang		9493

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Yi-Wen Tseng  
509 ROOSEVELT BLVD. #D306  
FALLS CHURCH, VA 22044

EXAMINER

WALBERG, TERESA J

ART UNIT	PAPER NUMBER
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3742

DATE MAILED: 10/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/677,317

Applicant(s)

WANG ET AL.

Examiner

Teresa J. Walberg

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

### DETAILED ACTION

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 3, 4, and 7-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Kawabata et al (2002/0070005).

Kawabata et al disclose (see Fig. 8) a heat dissipating structure including a heat dissipating member and a board member, the board member including an upper board (1) and a lower board (14), the upper board (1) including a plurality of recessed connecting structures formed on a top surface thereof, the heat dissipating member including a plurality of fins (3) parallel to and spaced with each other to form a plurality of air circulating channels, each of the fins including an embedding part along a bottom edge thereof engageable with the connecting structure to securely mount the heat dissipating structure on the board member.

With respect to claim 3 the lower board (14) includes a hollow cuboid with an open top (13). See Fig. 8 and paragraph 0069.

With respect to claim 4, the upper board is made of aluminum or copper. See paragraph 0064.

With respect to claim 7, the recessed connection structures include rectangular slots. See Fig. 10d.

With respect to claim 8, the heat dissipating member includes an aluminum-extruded heat sink. See paragraph 0097, line 5.

With respect to claim 9, the heat dissipating member includes a stack-type heat sink. See Fig. 8.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawabata et al (2002/0070005) in view of Wang (2003/0121645).

Kawabata et al, as discussed above disclose the claimed structure with the exception of the upper board being aluminum or copper and including a hollow cuboid with and open bottom.

Wang discloses a heat dissipating structure (see Fig. 4) where both top and bottom plates have open hollow cuboids and are made of copper or aluminum. See paragraph 0024.

It would have been obvious in view of Wang to provide both top and bottom plates with open hollow cuboids in the heat dissipating structure of Kawabata et al to more accurately secure them together and to make the upper and lower plates of copper or aluminum in order to obtain good heat transfer.

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5. Claims 6 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawabata et al (2002/0070005) in view of Lin et al (2003/0136545).

Kawabata et al, as discussed above disclose the claimed structure with the exception of the recessed connecting structures including dovetail slots and a fan mounted on the heat dissipating member.

Lin et al disclose a heat dissipating structure (see Figs. 2) including dovetail connecting slots (11, 21) and a fan (4) mounted on the heat dissipating member.

It would have been obvious in view of Lin et al to use dovetail slots to connect the fins in the heat dissipating structure of Kawabata et al to more securely hold them in place and to use a fan mounted on the heat dissipating structure in order to obtain improved heat transfer by increasing the air flow.

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Noda et al (2002/0112846), Corrado et al (6,639,803), Ellsworth Jr. et al (2003/0221816), Krassowski et al (2003/0116312), and Barten (2003/0155103) are cited to show fins mounted in slots.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Teresa J. Walberg whose telephone number is 703-308-1327. The examiner can normally be reached on M-F 9:00 - 5:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans can be reached on 703-305-5766. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Teresa J. Walberg  
Primary Examiner  
Art Unit 3742

tjw